

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 07-098129

(43)Date of publication of application : 11.04.1995

(51)Int.CI.

F24F 1/00
F24F 13/14

(21)Application number : 05-244558

(71)Applicant : MATSUSHITA SEIKO CO LTD

(22)Date of filing : 30.09.1993

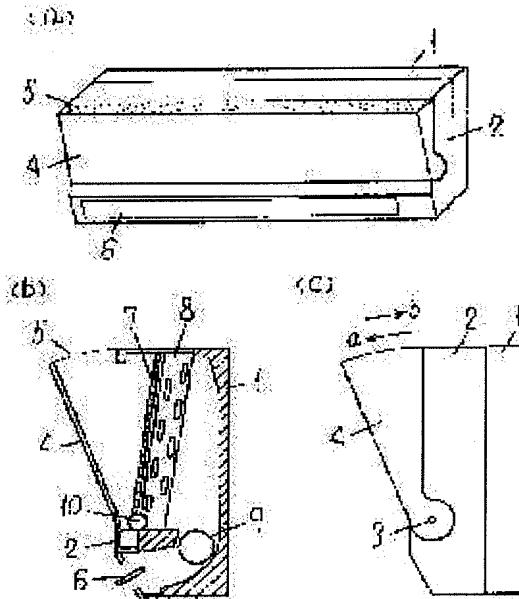
(72)Inventor : MORIKAWA SHIGERU

(54) SEPARATED AIR-CONDITIONER

(57)Abstract:

PURPOSE: To provide a separated air-conditioner wherein the front part of an indoor unit, which part is apt to attract persons' attention, can be prevented from becoming dirty by dust.

CONSTITUTION: A separated air-conditioner is composed as follows. A movable panel part 4 is provided so that an opening on the front part of a casing main body 2 shaping an indoor unit can be opened or closed. The movable panel part 4 is moved by a driving part 10 and an air-suction opening 5 is formed between the movable panel part 4 and the casing main body 2.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office

* NOTICES *

JPO and NCIPI are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] The discrete-type air conditioner which carried out opening of the front face, was equipped with the removable panel section which uses the lower part section as the supporting point, and is prepared free movable, and the mechanical component which carries out movable [of this removable panel section] so that front opening of the case body of the indoor unit which established the air port in the lower part section, and this case body might be opened and closed, and was considered more as the configuration by which an air suction port is formed between the removable panel section and a case body movable [said removable panel section].
[Claim 2] The discrete-type air conditioner according to claim 1 which the front section which forms the removable panel section considered as the dismountable configuration.

[Translation done.]

* NOTICES *

JPO and NCIPI are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the configuration of the air suction port of a discrete-type air conditioner.

[0002]

[Description of the Prior Art] In recent years, that to which cannot be easily stained with the dirt by the dust of inlet port, and inlet port can clean the indoor unit of a discrete-type air conditioner easily is demanded.

[0003] Conventionally, the indoor unit of this kind of discrete-type air conditioner had the common configuration as shown in drawing 3. Hereafter, it explains, referring to drawing 3 about the configuration.

[0004] As shown in drawing, as a front panel 102 equips the front face of the backplate body 101, the case body 103 is constituted, and the air port 106 which comes to have the louver which defines the intake grill 105 and the direction of the air blowdown of as an air suction port

104 is established in the front panel 102. In the case body 103, the filter 107, the interior-of-a-room side heat exchanger 108, a blower 109, etc. are incorporated. And many things of the slanting grill structure where the intake grill 105 consists of two or more staves formed aslant were used.

[0005] In the above-mentioned configuration, air was inhaled from the intake grill 105 of an air suction port 104, it was removed so that the dust in air might not go into the interior-of-a-room side heat exchange machine 108 with a filter 107, it performed air conditioning by the interior-of-a-room side heat exchanger 108, passed along the blower 109, and was blowing off from the air port 106 which comes to have the louver which defines the direction of the air blowdown.

[0006] Moreover, the front object of the indoor unit which contained the heat exchanger and the blower to the tooth-back plate to JP,4-43235,A was concentrated ahead, the V character-like space section was formed, inlet port was constituted, and the discrete-type air conditioner which prevents a short circuit phenomenon was proposed.

[0007]

[Problem(s) to be Solved by the Invention] In such a conventional discrete-type air conditioner, since the intake grill 105 of an air suction port 104 was on the air course of the preceding paragraph from a filter 107 in the former, dust stuck with the dust in the air which absorbs and is passed to the stave structure of the intake grill 105, and cleaning of the intake grill 105 had the problem of not being easy, for the stave structure of dirt and the intake grill 105. Moreover, while having to carry out movable [of the front object of the indoor unit which has weight in the latter], it was what is not taken into consideration about cleaning of an air course.

[0008] This invention solves the above-mentioned technical problem, and sets it as the 1st purpose that a front panel provides dirt with a pile discrete-type air conditioner.

[0009] The 2nd purpose is to offer the discrete-type air conditioner which can make easy cleaning of the air course between a front panel, a filter, and a front panel and a filter.

[0010]

[Means for Solving the Problem] In order that the discrete-type air conditioner of this invention may attain the 1st purpose of the above, the 1st means carries out opening of the front face, it has the removable panel section which uses the lower part section as the supporting point, and is prepared free movable, and the mechanical component which carries out movable [of this removable panel section] so that front opening of the case body of the indoor unit which established the air port in the lower part section, and this case body may be opened and closed, and it considers as the configuration by which an air suction port is formed between the removable panel section and a case body more movable [said removable panel section].

[0011] Moreover, in order to attain the 2nd purpose, the front section which forms the removable panel section considers the 2nd means as a dismountable configuration.

[0012]

[Function] By the configuration of the 1st means which described this invention above, at the time of operation of a discrete-type air conditioner, opening of the air suction port can be carried out more movable [the removable panel section], and air can be inhaled, and an air suction port can be embarrassed at the time of a halt.

[0013] Moreover, by the configuration of the 2nd means, since it enabled it to remove the front section of the removable panel section, cleaning of the air course between a filter, and a front panel and a filter can be performed, without removing the whole front panel.

[0014]

[Example]

(Example 1) The 1st example of this invention is explained hereafter, referring to drawing 1.

[0015] As shown in drawing, the case body 2 which carried out opening of the front face is formed in the front face of the backplate body 1 of an indoor unit, and the removable panel section 4 which is ****(ed) by the revolving shaft 3 and rotates an end on the case body 2 is formed, and it constitutes so that an air suction port 5 may be formed between the removable panel section 4 and the case body 2 of rotation of the removable panel section 4. Moreover, the air port 6 which equipped the case body 2 with the louver which defines the direction of the air blowdown is formed. And in the case body 2, the mechanical component 10 rotating around a

filter 7, the interior-of-a-room side heat exchanger 8, a blower 9, and the removable panel section 4 is incorporated.

[0016] By the above-mentioned configuration, at the time of operation of the indoor unit of a discrete-type air-conditioner machine, a mechanical component 10 operates, it is transmitted to the removable panel section 4, and the removable panel section 4 rotates in the direction of a centering on a revolving shaft 3. When the removable panel section 4 rotates in the direction of a, opening of the air suction port 5 of the case body 2 is carried out, and absorption of air of it becomes possible. After the air inhaled from the air suction port 5 by which opening was carried out is removed so that the dust in air may not go into the interior-of-a-room side heat exchange machine 8 with a filter 7, heat exchange of it is carried out by the interior-of-a-room side heat exchanger 8, it passes along a blower 9, and blows off from the air port 6 equipped with the louver which defines the direction of the air blowdown. And at the time of a halt of the indoor unit of a discrete-type air conditioner, a mechanical component 10 operates, it is transmitted to a removable panel 4, and the removable panel section 4 rotates in the direction of b centering on a revolving shaft 3. Moreover, when the removable panel section 4 rotated in the direction of b, an air suction port 5 is embarrassed.

[0017] Thus, it is prepared in a front face, and is hard to take lessons for dust from a panel front face, and the interior of a discrete-type air conditioner can be prevented from becoming dirty at the time of a discrete-type air-conditioner halt according to the discrete-type air conditioner of the 1st example of this invention.

[0018] (Example 2) The 2nd example of this invention is explained hereafter, referring to drawing 2. In addition, the same sign is attached about the same part as the 1st example, and detailed explanation is omitted.

[0019] As shown in drawing, removable panel section 4A consists of the front-face sections 12 of the removable panel section whose removal is possible from the removable panel section body 11 and the removable panel section body 11.

[0020] The above-mentioned configuration can clean the front section background of removable panel section 4A used as the air course between a filter 7, and an air suction port 5 and a filter 7, and the side-face background of removable panel section 4A by removing the front-face section 12 of the removable panel section at the time of cleaning.

[0021] Thus, according to the discrete-type air conditioner of the 2nd example of this invention, it can clean very simple to the part which is usually hard to clean.

[0022] In addition, although the removable panel section 4 was formed in the front section of the case body 2 in the example, it cannot be overemphasized that the removable panel section 4 is not limited to the front section of the case body 2, the removable panel section 4 may be formed in the top-face section of the case body 2 etc. as long as absorption of air is possible, and a difference is not produced in the operation effectiveness.

[0023]

[Effect of the Invention] Since it constitutes according to this invention so that the removable panel section may be prepared so that front opening of the case body which forms an indoor unit may be opened and closed, and an air suction port may be formed more between the removable panel section and a case body movable [said removable panel section] so that clearly from the above example, the discrete-type air conditioner to which dust cannot be easily attached to the front section of an indoor unit can be offered.

[0024] Moreover, since the front section of the removable panel section is made dismountable, the discrete-type air conditioner which can perform cleaning of the front section background of the removable panel section used as the air course between a filter, and an air suction port and a filter and the side-face background of the removable panel section simple, without removing the whole front panel can be offered.

[Translation done.]

* NOTICES *

JP0 and NCIPI are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

Drawing 1 (a) The perspective view of the indoor unit of the discrete-type air conditioner in the 1st example of this invention

(b) This side-face sectional view

(c) This side elevation

Drawing 2 The perspective view of the removable panel section in the 2nd example of this invention

Drawing 3 (a) The perspective view of the indoor unit of the discrete-type air conditioner in the conventional example

(b) This side-face sectional view

[Description of Notations]

2 Case Body

4 Removable Panel Section

4A Removable panel section

5 Air Suction Port

6 Air Port

10 Mechanical Component

12 Front Section

[Translation done.]

(19)日本国特許庁 (JP)

(12) 公開特許公報 (A)

(11)特許出願公開番号

特開平7-98129

(43)公開日 平成7年(1995)4月11日

(51)Int.Cl.⁶

F 24 F 1/00
13/14

識別記号 401 B
H

F I

技術表示箇所

審査請求 未請求 請求項の数2 O L (全4頁)

(21)出願番号 特願平5-244558

(22)出願日 平成5年(1993)9月30日

(71)出願人 000006242

松下精工株式会社

大阪府大阪市城東区今福西6丁目2番61号

(72)発明者 森川 滋

大阪府大阪市城東区今福西6丁目2番61号

松下精工株式会社内

(74)代理人 弁理士 小鍛治 明 (外2名)

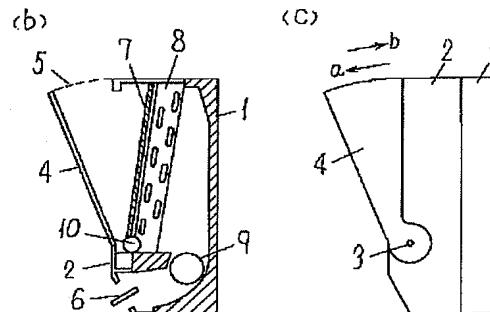
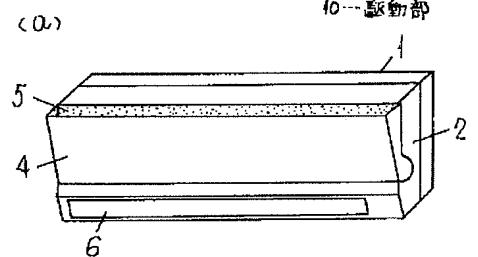
(54)【発明の名称】 分離型空気調和機

(57)【要約】

【目的】 目につきやすい室内ユニットの前面部が塵により汚れるのを防止した分離型空気調和機を提供することを目的とする。

【構成】 室内ユニットを形成するケース本体2の前面開口を開閉するように可動パネル部4を設け、可動パネル部4を駆動部10で可動することにより、可動パネル部4とケース本体2間に空気吸込口5を形成するように構成する。

2---ケース本体
4---可動パネル部
5---空気吸込口
6---空気吹出口
10---駆動部



【特許請求の範囲】

【請求項1】 前面を開口し、下方部に空気吹出口を設けた室内ユニットのケース本体と、このケース本体の前面開口を開閉するように下方部を支点にして可動自在に設けられる可動パネル部と、この可動パネル部を可動する駆動部とを備え、前記可動パネル部の可動により可動パネル部とケース本体間に空気吸込口が形成される構成とした分離型空気調和機。

【請求項2】 可動パネル部を形成する前面部が取り外し可能な構成とした請求項1記載の分離型空気調和機。

【発明の詳細な説明】

【0001】

【産業上の利用分野】 本発明は、分離型空気調和機の空気吸込口の構成に関する。

【0002】

【従来の技術】 近年、分離型空気調和機の室内ユニットは、吸込口の塵による汚れが付きにくく、かつ吸込口が容易に清掃できるものが要望されている。

【0003】 従来、この種の分離型空気調和機の室内ユニットは、図3に示すような構成が一般的であった。以下、その構成について図3を参照しながら説明する。

【0004】 図に示すように、後板本体101の前面に前面パネル102が装着するようにしてケース本体103を構成しており、前面パネル102には空気吸込口104としての吸込グリル105と空気吹き出し方向を定めるルーバーを備えてなる空気吹出口106が設けられている。ケース本体103内には、フィルタ107、室内側熱交換器108や送風機109などが組み込まれている。そして、吸込グリル105は、斜めに形成した複数の横桟からなる斜めグリル構造のものが多く用いられていた。

【0005】 上記構成において、空気は空気吸込口104の吸込グリル105から吸い込まれ、フィルタ107で室内側熱交換器108に空気中の塵が入らないよう取り除かれ、室内側熱交換器108で空気調和を行い、送風機109を通り、空気吹き出し方向を定めるルーバーを備えてなる空気吹出口106から吹き出されていた。

【0006】 また、特開平4-43235号公報には背面板に対し熱交換器および送風機を収納した室内ユニットの前面体を前方に傾倒し、V字状の空間部を形成して吸込口を構成し、ショートサーキット現象を防止する分離型空気調和機が提案されていた。

【0007】

【発明が解決しようとする課題】 このような従来の分離型空気調和機では、前者においては空気吸込口104の吸込グリル105はフィルタ107より前段の風路上にあるため、吸い込まれ通過する空気中の塵により吸込グリル105の横桟構造に塵が付いて汚れ、また吸込グリル105の横桟構造のために吸込グリル105の清掃は

10

20

30

40

50

不容易でないという問題があった。また、後者においては重量のある室内ユニットの前面体を可動しなければならないと共に風路の清掃については考慮されていないものであった。

【0008】 本発明は、上記課題を解決するもので、前面パネルが汚れにくい分離型空気調和機を提供することを第1の目的とする。

【0009】 第2の目的は、前面パネルとフィルタ、および前面パネルとフィルタ間の風路の清掃を容易にすることのできる分離型空気調和機を提供することにある。

【0010】

【課題を解決するための手段】 本発明の分離型空気調和機は上記第1の目的を達成するために、第1の手段は前面を開口し、下方部に空気吹出口を設けた室内ユニットのケース本体と、このケース本体の前面開口を開閉するように下方部を支点にして可動自在に設けられる可動パネル部と、この可動パネル部を可動する駆動部とを備え、前記可動パネル部の可動により可動パネル部とケース本体間に空気吸込口が形成される構成とする。

【0011】 また、第2の目的を達成するために、第2の手段は可動パネル部を形成する前面部が取り外し可能な構成とする。

【0012】

【作用】 本発明は上記した第1の手段の構成により、分離型空気調和機の運転時には可動パネル部の可動により空気吸込口を開口させ空気の吸い込みを行わせ、かつ停止時には空気吸込口は閉口させることができる。

【0013】 また、第2の手段の構成により、可動パネル部の前面部を取り外せるようにしたため、フィルタ、および前面パネルとフィルタ間の風路の清掃を前面パネル全体を外すことなく行うことができる。

【0014】

【実施例】

(実施例1) 以下、本発明の第1実施例について、図1を参照しながら説明する。

【0015】 図に示すように、室内ユニットの後板本体1の前面に前面を開口したケース本体2を設け、ケース本体2には一端を回転軸3に枢持され回動する可動パネル部4を設け、可動パネル部4の回動により可動パネル部4とケース本体2間に空気吸込口5が形成されるように構成する。また、ケース本体2には空気吹き出し方向を定めるルーバーを備えた空気吹出口6が設けられている。そして、ケース本体2内には、フィルタ7、室内側熱交換器8、送風機9、可動パネル部4を回動する駆動部10が組み込まれている。

【0016】 上記構成により、分離型空気調和機の室内ユニットの運転時、駆動部10が作動し可動パネル部4に伝達され回転軸3を中心にしてa方向に可動パネル部4は回動する。可動パネル部4がa方向に回動することにより、ケース本体2の空気吸込口5が開口され空気

3

の吸い込みが可能となる。開口された空気吸込口5から吸い込まれた空気は、フィルタ7で室内側熱交換機8に空気中の塵が入らないように取り除かれたのち、室内側熱交換器8で熱交換され、送風機9を通り、空気吹き出し方向を定めるルーバーを備えた空気吹出口6から吹き出される。そして、分離型空気調和機の室内ユニットの停止時、駆動部10が作動し可動パネル4に伝達され回転軸3を中心にしてb方向に可動パネル部4は回動する。また、可動パネル部4がb方向に回動したことにより空気吸込口5は閉口される。

【0017】このように本発明の第1実施例の分離型空気調和機によれば、前面に設けられパネル表面に塵がつきにくく、また分離型空気調和機停止時は分離型空気調和機内部が汚れないようになることができる。

【0018】(実施例2)以下、本発明の第2実施例について、図2を参照しながら説明する。なお、第1実施例と同一部分については同一符号を付して詳細な説明は省略する。

【0019】図に示すように、可動パネル部4Aは可動パネル部本体11と可動パネル部本体11より取り外しのできる可動パネル部前面部12で構成されている。

【0020】上記構成により、清掃時、可動パネル部前面部12を取り外すことによりフィルタ7、空気吸込口5とフィルタ7間の風路となる可動パネル部4Aの前面部裏側、可動パネル部4Aの側面裏側の清掃を行うことができる。

【0021】このように本発明の第2実施例の分離型空気調和機によれば、通常清掃しにくい部分まで非常に簡単に清掃を行うことができる。

【0022】なお、実施例では可動パネル部4をケース本体2の前面部に設けたが、可動パネル部4はケース本体2の前面部に限定されるものではなく、空気の吸い込みが可能であれば、ケース本体2の上面部などに可動パネル部4を設けても良く、その作用効果に差異を生じない。

4

いことはいうまでもない。

【0023】

【発明の効果】以上の実施例から明らかなように、本発明によれば室内ユニットを形成するケース本体の前面開口を開閉するように可動パネル部を設け、前記可動パネル部の可動により可動パネル部とケース本体間に空気吸込口を形成するように構成しているので、室内ユニットの前面部に塵の付きにくい分離型空気調和機を提供できる。

【0024】また、可動パネル部の前面部を取り外し可能としているので、フィルタ、および空気吸込口とフィルタ間の風路となる可動パネル部の前面部裏側、可動パネル部の側面裏側の清掃を前面パネル全体を取り外すことなく簡便に行うことができる分離型空気調和機を提供できる。

【図面の簡単な説明】

【図1】(a) 本発明の第1実施例における分離型空気調和機の室内ユニットの斜視図

(b) 同側面断面図

(c) 同側面図

【図2】本発明の第2実施例における可動パネル部の斜視図

【図3】(a) 従来例における分離型空気調和機の室内ユニットの斜視図

(b) 同側面断面図

【符号の説明】

- | | |
|----|--------|
| 2 | ケース本体 |
| 4 | 可動パネル部 |
| 4A | 可動パネル部 |
| 5 | 空気吸込口 |
| 6 | 空気吹出口 |
| 10 | 駆動部 |
| 12 | 前面部 |

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

54

55

56

57

58

59

60

61

62

63

64

65

66

67

68

69

70

71

72

73

74

75

76

77

78

79

80

81

82

83

84

85

86

87

88

89

90

91

92

93

94

95

96

97

98

99

100

101

102

103

104

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

131

132

133

134

135

136

137

138

139

140

141

142

143

144

145

146

147

148

149

150

151

152

153

154

155

156

157

158

159

160

161

162

163

164

165

166

167

168

169

170

171

172

173

174

175

176

177

178

179

180

181

182

183

184

185

186

187

188

189

190

191

192

193

194

195

196

197

198

199

200

201

202

203

204

205

206

207

208

209

210

211

212

213

214

215

216

217

218

219

220

221

222

223

224

225

226

227

228

229

230

231

232

233

234

235

236

237

238

239

240

241

242

243

244

245

246

247

248

249

250

251

252

253

254

255

256

257

258

259

260

261

262

263

264

265

266

267

268

269

270

271

272

273

274

275

276

277

278

279

280

281

282

283

284

285

286

287

288

289

290

291

292

293

294

295

296

297

298

299

300

301

302

303

304

305

306

307

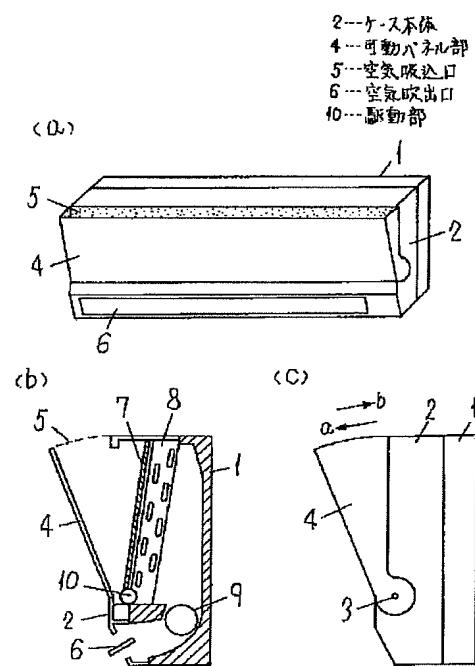
308

309

310

3

【図1】



【図3】

